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B P I S A E

RESEARCH ACTIVITIES

PLANT INDUSTRY STATION, BELTSVILLE, MD.

JANUARY 1949

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Research With Radioactive Chemicals Expanded

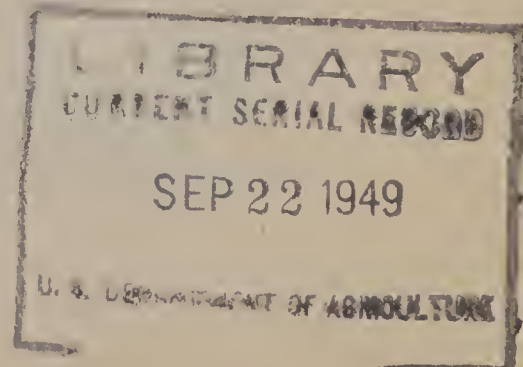
Preliminary work has been started, in cooperation with the Atomic Energy Commission, on special facilities at Plant Industry Station for expanding plant and soil research using radioactive chemicals.

The \$200,000 building program calls for: a greenhouse and head-house with full basement containing constant-environment growth rooms; so-called "hot" laboratories designed for handling radioactive isotopes; improved facilities for the manufacture of radioactive materials and soil amendments such as lime and related materials; and an area for small-scale field experiments.

The new structures will be located on a plot immediately south of the Range 3 greenhouses and east of the cold frames. They will occupy an area of about $2\frac{1}{2}$ acres.

The facilities will permit extensive new research programs. Among these are: (1) safe disposal of liquid radioactive wastes at installations of the atomic energy program by ascertaining exactly how radioactive elements behave when introduced into the soils; (2) the movement, fixation, and release of different plant nutrients in various soil types by use of radioactive techniques - these investigations will provide new and more precise knowledge on how and when to plow and fertilize different crops on different soils; (3) development of procedures for safe and effective use of radioactive isotopes in soil and crop research; (4) manufacture of fertilizers incorporating radioactive trace elements for use by other agricultural research agencies; (5) a training program for scientists skilled in the use of isotopes in soil and crop research.

It is expected that eventually arrangements will be made with the Graduate School of the Department whereby graduate students and staff members from the Land-Grant Colleges and other research institutions may receive training here in the use of radioactive isotopes.



New Horizons For Agriculture

What potentialities lie ahead in the field of crop research?

In a talk before the American Farm Bureau Federation at the annual convention in Atlantic City in December, Dr. Robert M. Salter, chief of the Bureau said:

"Perhaps the greatest opportunity for the future lies in a new approach to crop research--that of combining improved technology to take advantage of interactions. Modern research must be specialized. At the same time we must combine the findings--integrate the new production practices and learn the results of their interactions.

"Investigations are needed to find out about further increases in efficiency that may result from the interactions of properly combined improved parts. Recent research with corn points the way to a completely revised crop management machine that may increase production efficiency several fold.

"In 1944 experiments with corn culture in North Carolina were undertaken to combine the plant breeders' knowledge of corn hybrids; the soil scientists' knowledge of soil types, fertilization, and plant spacing; and the agricultural engineers' knowledge of improved methods of controlling weeds and applying fertilizer. Corn yields in this area average only 20 bushels per acre when corn is produced with traditional practices. Yields of more than 70 bushels per acre have been consistently produced when the improved practices were applied in combination--that is when a heavy application of nitrogen properly placed in relation to the plants was combined with growing adapted corn hybrids, increasing the number of plants per acre, and controlling weeds with early shallow cultivation.

"Some North Carolina farmers have already started using this new knowledge on their farms. Consequently this year the average corn yield for the State is estimated at 34 bushels per acre--75 percent higher than any 10-year average before 1944, and probably not over one-third of North Carolina corn growers have yet adopted the new method. By 1960 perhaps 50-bushel-per-acre corn production in this area will be the rule rather than the exception, as today.

"Recent experiments with corn production on irrigated lands in the Columbia River Basin demonstrate this same principle. The average farmer in this region, using traditional practices, is producing about 45 bushels of corn per acre. In 1947 yields up to 193 bushels per acre were obtained in field experiments using improved practices in combination.

"Results from these initial experiments give new hope for more efficient production of not only corn but also many other crops, including other feed grains, hay crops, and pastures. Recognizing that lack of adequate high quality feeds in the South is the first limiting factor to diversification toward livestock, our Bureau and the State Experiment Stations have underway what we hope will develop into a comprehensive research program aimed at expanding feed supplies. The program is keyed to the principle of applying new technology in combination. This approach to agricultural research appears to offer one of the real big potentialities that lie ahead."

(Mimeographed copies of the complete speech can be obtained from the Information Division, Plant Industry Station, Beltsville, Md.)

Effects of New Insecticides on Plants and Soils

The Bureau's findings on the effect of some new insecticides on plants and soils were reviewed by Dr. F. P. Cullinan, assistant chief, in a talk before the Entomological Society of America meeting in New York, in December.

He pointed out that the research, most of which has been conducted by Dr. A. C. Foster, Dr. M. C. Goldsworthy, and John C. Dunegan, Fruit and Vegetable Crops and Diseases, has been along two lines: (1) a study of the effect of the materials mixed at varying concentrations with different types of soils on the germination of seedlings and the growth of plants; and (2) determination of the toxic effects of the chemicals when applied to foliage in different concentrations used for insect control.

We have found that all four of the chlorinated hydrocarbon insecticides - DDT, BHC, Chlordane, and Toxaphene - will depress growth of some seedling plants when applied to certain soils in even small amounts. Higher soil concentration depresses plant growth even more. The insecticides retard root development in some plants and injures the roots in others. BHC is the only one of the four materials found to affect the flavor of some plants. DDT, when applied to the foliage or to the soil, will retard the growth of certain sensitive plants without any other obvious symptoms.

The toxicity of plants varies with different soil types. Some plants are more susceptible to the chemicals than others, and we find differences even within varieties of plants. At Beltsville, Triumph lima beans were severely stunted by the application of 0.075 per cent wettable DDT, but Peerless limas - a sister variety - showed no injury under the same condition. Nor were 13 other varieties of lima beans on the same experimental plot injured when tested with the same treatment.

Research during the past four years has brought to light a lot of questions that need to be answered. On the basis of the information which we now have we expect to initiate more intensive soil studies. We want to try to develop methods for decreasing the toxic effects of these materials in the soil.

We should know what materials might be added to soils low in organic matter to adsorb the chemicals. It appears that the explanation for less toxicity in soils high in organic matter may be adsorption. With the use of certain sensitive plants we hope to establish a biological assay that will be valuable in determining initial as well as accumulated toxicity.

In any discussion of the effects of these chemicals on plants and soils we must not lose sight of the fact that the use of these valuable insecticides have helped increase yield of fruits, vegetables, and field crops. By controlling insects hitherto difficult to kill with the best known insecticides these chemicals have reduced production costs.

We most certainly would not recommend throwing these new materials overboard simply because there is so much still to be learned about them. But we do want to emphasize that farmers and gardeners using these chemicals should be informed of their limitations as well as their benefits in order to recognize the possible hazards inherent in their application.

North Central Conference Reviews Weed Control Findings

More than 700 persons attended the fifth annual meeting of the North Central Weed Control Conference at Springfield, Ill., December 8. Representation was about equally divided among the chemical companies, machinery manufacturers, and State and Federal weed control specialists. Dr. L. M. Stahler, Cereal Crops and Diseases, was chairman of the research committee.

Consensus of the Conference as expressed by the policy committee was as follows:

(1) Perennial weeds such as Canada thistle, sow thistle, and whitetop cannot be exterminated economically with 2,4-D but they can be brought under reasonable control and at low cost.

(2) Susceptibility of annual weeds to 2,4-D varies widely, but in any case such weeds are most easily killed when treated in the early stages of development and under conditions which promote vigorous growth.

(3) Maximum tolerance of cereal crops to 2,4-D occurs immediately after the plants are fully tillered. The largest dosage that these crops will endure without injury is $1/2$ to $3/4$ pound of 2,4-D acid per acre in the salt form or slightly less in the ester form.

(4) 2,4-D has a place in the corn field whenever susceptible weeds cannot be adequately controlled by conventional methods of cultivation. Some injury to the corn may be expected, although in most years it does not materially affect the yield. The logical dosage is $1/4$ to $1/2$ pound of 2,4-D acid per acre.

(5) Most perennial grasses except the bent grasses and buffalo grass are so tolerant of 2,4-D that dosages of 1 pound of 2,4-D acid per acre or more may be used with impunity.

(6) Pre-emergence applications of 2,4-D on corn are an adjunct to cultivation but not a complete substitute for it. Pre-emergence is not recommended on sandy or light porous soils.

(7) Chemical weed control in horticultural crops is still in the experimental stage. With the exception of carrots and corn much research is still needed before recommendations can safely be made.

(8) In potatoes and sugarbeets, chemical weed control is promising but cannot yet be recommended with certainty. 2,4-D oils, pentachlorophenol, dinitros, and TCA all appear to have promise.

(9) For killing wood plants with foliage sensitive to 2,4-D concentrations of 2,000 parts per million of the ester form are recommended provided there is no danger from drifting spray and volatility. The same concentration of the salt form may be used under humid conditions. Combinations of 2,4-D and 2,4,5-T give promise of being more efficient than either chemical used alone.

L. W. Kephart, who was elected an honorary member of the conference, was presented a scroll with the following citation: "In recognition of notable contributions made to progress in weed control research; for long association with and interest in weed control work; for competence in scientific skills; for unflagging devotion to service; and for a spirit of cooperation, all of which have set a high example for other workers in this field of agricultural research."

Triumph, An All-America Selection for 1949

The Triumph bush lima bean developed by Dr. Roy Magruder, formerly of this Bureau but now with the Research and Marketing Administration, and Robert E. Wester of the Bureau has been awarded a silver medal and named one of the 7 superior new vegetables winning All-America Selection Awards for 1949.

Triumph was originated as the result of 10 generations of selection and inbreeding from a cross between Fordhook bush lima and Sieva pole lima. It is recommended for home gardens and for commercial processing. The seed coats are light green and retain the color in both freezing and canning.

Triumph matures about the same time as Peerless and 3 to 10 days later than Henderson. At Beltsville, it reaches prime processing state in 72 to 82 days from planting. In yield trials conducted in many sections of the United States and Canada, it has outyielded Henderson in a number of locations but is not so drought resistant.

Pioneer Hevea Planting Is Healthy and Vigorous

Disease control measures developed by pathologists of the Division of Rubber Plant Investigations are making it possible to grow healthy plantations of Hevea rubber in several Latin-American countries.

The Goodyear plantation at Cairo, Costa Rica is a case in point. Started in 1936, the plantation was so severely damaged by South American Leaf Blight four years later that the company considered abandoning it.

About that time, however, preliminary results by Bureau scientists showed that the disease could be circumvented by spraying followed by top-budding with resistant clones. The Goodyear people adopted these methods on a trial basis and later extended the use to the entire plantation. The pioneer plantation of high-yielding Hevea trees is now coming into production and is as vigorous and healthy as Hevea plantations in any part of the world.

New Vegetable Varieties Introduced

Whitestar, a new variety of sweetpotato is a starch type adapted for growing in the middle and lower South for feed and industrial purposes. It is resistant to fusarium wilt and has been an outstanding yielder in tests conducted for several years at Beltsville and at the Agricultural Experiment Stations of Georgia, Alabama, Mississippi, Louisiana, and Texas. Whitestar originated from an open-pollinated flower of the Hawaiian variety, Laupahoehoe, and was originally selected by Dr. C. E. Steinbauer at Beltsville.

Progress, a new crisphead variety of lettuce developed by Dr. Ross Thompson, has been released by the Bureau in cooperation with the New Jersey Experiment Station where it was tested and evaluated. While the full range of its usefulness remains to be determined, Progress seems promising for the Middle Atlantic States.

Turf Studies Attract Visitors

More than 200 visitors from 22 states attended the 1948 Turf Field Day at Plant Industry Station and heard the work explained by Dr. Fred V. Grau, director of the U. S. Golf Association green section, Marvin H. Ferguson, agronomist for the green section, and Ian Forbes, Jr., agronomist, Division of Forage Crops and Diseases. On exhibit were:

(1) A 17-acre one-year planting of *Alta fescue* growing without irrigation on gravel-sand-clay subsoil and making a most satisfactory lawn in spite of an attack by disease this past summer.

(2) Fertilizer trials in which ureaform materials were compared with Milorganite and ammonium nitrate. Results with ureaform are promising.

(3) Turf in which *Zoysia japonica*, seeded in July, was used to control crabgrass. The turf was mowed at 1/2 inch and fertilized only once in the spring after seeding. It was not irrigated.

(4) Combinations of cool-season and warm-season grasses offering interesting possibilities for year-round turf of good color and freedom from crabgrass with the minimum of irrigation and fertilization. These included combination of U-3 Bermuda grass and bents, bluegrasses, and fescues, and also of Japanese lawn grass with cool-season grasses.

(5) Strain trials of fescues in which Illahee creeping red fescue and Penn State chewings fescue gave the top performance in 1948.

(6) A six-year stand of *Alta fescue* which presents a smooth, nearly complete weed-free turf for roadsides and airfields where it has been mowed only once a year.

(7) Results of tests of the effect of golf shoes on turf showing that lug soles do less damage than spike soles.

(8) Strain trials of 100 bentgrasses collected from all over the United States in which Arlington (C-1) bent, a green section development, remains outstanding for toughness and beauty on greens, tees, fairways and even on lawns. In these trials, the grasses are given no treatment for disease or insects and no irrigation. Ninety percent of the collection was destroyed by disease and drought.

(9) Tests to show the effect of golf shots on various types of turfs with results showing the least damage on mixtures of cool-season and warm-season grasses. This toughness enhances these mixtures for use on athletic fields as well as on tees and fairways.

October 19 has been set as the date of the 1949 Turf Field Day. Bureau employes are invited to inspect the plots at any time.

Iowa Farmers Plant Improved Varieties of Oats

Clinton oats outyielded the older Richland variety by nearly 15 bushels per acre, 1948 community grain trials conducted throughout Iowa show. Dr. H. C. Murphy, Cereal Crops and Diseases, who is located at the Agricultural Experiment Station at Ames, reports that Clinton and other improved varieties now occupy nearly all of the Iowa oat acreage. The total increased yield from the improved varieties during the past 8 years has been estimated at about 150 million bushels worth 100 million dollars to Iowa farmers alone.

* REPORTS ON RECENT FINDINGS *

More Corn-like Form of Gama Grass Found in Southern Mexico

The discovery in Southern Mexico of a more corn-like form of Gama Grass than any previously noted is reported by Dr. L. F. Randolph, Cereal Crops and Diseases. This rare, distinctive type has a stalk as thick at the base and leaves as wide as an ordinary corn plant. The number of branches in the tassel actually exceed the number usually present in corn tassels. Given more corn-like seeds and ears more closely resembling those of corn, this plant might well be considered a "missing link" in the evolution of cultivated corn.

Dr. Randolph has just returned from Mexico where he went to study the possibility of crossing Mexican corn and the native species of *Tripsacum* or Gama Grass, a wild relative of corn which may have influenced its development as a cultivated plant.

We have relatively little definite information on the origin of corn as a cultivated plant. One view holds that the admixture of a primitive type of corn with Gama Grass in relatively recent times was an important factor in the development of the corn from which modern varieties and hybrids were originated.

Dr. Randolph's findings, however, do not support this hypothesis. Results of this year's experiments and of similar work elsewhere in Mexico in 1947 and in Guatemala in 1946 indicate that existing types of corn and *Tripsacum* in those regions do not hybridize easily. Apparently corn has existed as a separate species in Central and South America - where its wild relatives, teosinte and Gama Grass also occur - much longer than is generally believed.

Four Types of Strawberry Root Rot Recognized

That strawberry root rot in Oregon is due to a number of causal factors is shown in results of studies conducted by Dr. P. W. Miller in cooperation with the Oregon Agricultural Experiment Station.

Four different types of root rots identified on the basis of cause are: (1) red stele, due to the fungus *Phytophthora fragariae*; (2) brown root rot, due to the combined action of certain weakly parasitic soil fungi and adverse soil conditions; (3) a form of black root due to the desiccation of roots during digging and planting; and (4) a second form of black root rot due to lack of soil aeration and possibly the presence of toxic substances in the soil.

Red stele affects the woody cylinder. Brown root rot and black root rot due to desiccation affect only the cortex. The other black root rot affects both the cortex and wood.

Ultrasonics Offer Promise in Control of Insect Larvae

Practical agricultural applications of ultrasonics and some of the problems of using high-frequency sound radiations produced electrically are indicated in preliminary studies conducted by the Division of Farm Electrification in cooperation with other Division and with other ARA Bureaus.

Treatment with ultrasonic waves killed mosquito larvae in 5 seconds in tests conducted by Lowell E. Campbell and Leonard G. Schoenleber in cooperation with BEPQ. Results show the percentage of mortality of the larvae to be directly correlated with the amplitude of the waves. Within the time limits of the test, length of exposure made no significant difference. The larvae appeared to be literally torn apart.

Exposures of up to a full minute were required for killing larvae of the codling moth and those imbedded in fruit were apparently undisturbed.

In another study to find whether ultrasonic sterilization offers a feasible means of controlling fruit fly in citrus fruits, the researchers found that exposure to the rays decreased the Vitamin C content of the orange juice, the longer the exposure, the less Vitamin C remained.

Other tests indicate that treatment with ultrasonics will reduce the germination period of certain seeds and tubers. The vibrations will also reduce particles of DDT to smaller size than has been possible heretofore by the usual processes.

Agricultural uses which appear to warrant immediate investigation include the biological effects on plant and animal materials, bacterial control, sterilization or pasteurization of milk and other food products, homogenization of milk, emulsification and near dispersion in liquids, coagulation of particles suspended in fluids, and control of insects and diseases.

One-Variety Cotton Program in Alabama

An outstanding example of improvement in cotton production largely as a result of the standardized one-variety program is reported from Alabama.

In 1947 about 85 percent of the crop was planted to only 3 improved varieties and 98.3 percent showed 15/16 or longer staple. This is a marked change from 1930, when Alabama farmers planted 35 or more miscellaneous varieties and only 6.1 percent of the crop showed 15/16 of an inch or better in staple length.

Farmers in the standardized areas received an extra cash income of \$9.64 an acre from larger yields and premiums for the better cotton. This totaled in extra cash returns nearly \$6,000,000 from the 600,000 acres in standardized production.

Freight Committee Adopts Bureau Finding

A Bureau recommendation that vents in carloads of California oranges be left open during the early part of the trip east when temperatures are above 20° F has been adopted by the National Perishable Freight Committee. The Committee has amended its rule governing the closing of ventilators to provide that the vents be closed at 20° F outside temperature rather than at 32° F in territory west of Ogden, Utah, and Belen, N. Mexico.

Peanut Evaluation Laboratory Established

A small but complete laboratory has been set up at Plant Industry Station to evaluate peanut samples under test in an RMA project to improve the peanut crop through the use of superior varieties and improved methods of harvesting and curing.

J. H. Beattie is in charge of the Bureau's part of this work, which is carried on in cooperation with the Agricultural Experiment Stations of Virginia, North and South Carolina, Georgia, Florida, Alabama, Texas, and Oklahoma.

The central laboratory supplies all planting seed for the cooperative experiments to insure uniformity of material under test. Moisture determinations are made on the peanuts at picking time and again on arrival at the laboratory. Here shelling percentages are determined and the samples made into salted peanuts, blanched peanuts, and peanut butter. The data and samples are then returned to the State cooperators.

Two Elements Affect Magnesium in Tung

Evidence that magnesium deficiency in bearing tung trees is closely related to levels of nitrogen and potassium and can be corrected most effectively when attention is given to these elements comes from a study conducted by Dr. Marshall S. Neff at Monticello, Florida.

Testing various levels of nitrogen, phosphorus, potash, calcium, and magnesium, he found that high nitrogen in the presence of low potassium increases the magnesium content of leaves tremendously but did not have this effect in the presence of high potassium. Heavy applications of magnesium did not increase the magnesium content of the leaves where heavy applications of potash were used.

* NEW PROJECTS *

To Study Milling and Baking Qualities of Wheat

The Cereals Division has inaugurated an RMA project to improve the technology of milling and baking and to evaluate varieties of wheat for milling and baking qualities before release to farmers.

The work, under the direction of Dr. S. C. Salmon and Dr. B. B. Bayles, is set up along three lines to be conducted at three locations. These are:

A study of soft red winter wheat varieties at Wooster, Ohio in cooperation with the Federal Soft Wheat Laboratory and with Dr. V. H. Morris and W. T. Yamazaki doing the research.

The effect of temperature and other environmental factors during kernel formation on the quality characteristics of hard wheats at the Hard Wheat Laboratory, Manhattan, Kansas in cooperation with the Kansas Station and with K. F. Finney and J. F. McCammon conducting the investigation.

The relation of physical and chemical characteristics of wheats grown in the Western region to the quality of bakery products and the development of tests for measuring these characteristics at Pullman, Washington, in cooperation with the Washington Station and with Dr. M. A. Barmore in charge.

 * NOTES ON PERSONNEL *

Owens Observes Sugar-Beet Breeding in Europe

The work of U. S. Plant scientists in breeding disease resistant sugar beet varieties, particularly for curly-top disease, is outstanding, Dr. F. V. Owen, Sugar Plant Investigations, was told when he talked with sugar beet breeders attending the Eighth International Genetics Congress in Stockholm and later in Southern Sweden, Denmark, Holland, and England.

The Europeans are also much interested in the use in this country of a male-sterile character to produce superior yielding sugar beet hybrids and to obtain curly-top resistant triploids.

One reason for good sugar beet yields in Europe, Dr. Owens noted, was the emphasis on careful and rather close spacing of plants. However, growers there are talking much about mechanization and in order to use the machinery to better advantage they are increasing row widths to about 20 inches. He saw one field in England with 24-inch rows. This trend toward mechanization stresses the need for varieties of vigorous growing beets that will produce high yields with relatively wide spacing. Tests in this country show that the curly-top resistant variety US22 tolerates such spacing better than most other varieties.

Jenkins Attends Hybrid Corn Conference in Italy

Dr. M. T. Jenkins sailed for Italy, December 2, to confer with agricultural officials on the results of hybrid corn yield tests and the establishment of policies for the production of hybrid corn.

Dr. Jenkins conducted a hybrid corn school in Italy for representatives of several European countries in the summer of 1947. At that time he helped to arrange for the testing of a large number of American hybrids in 1948. The results of these tests will be reported at a meeting early in January. Dr. Jenkins is traveling under the auspices of the Food and Agriculture Organization of the United Nations.

Hurst Reports on Grinding and Mixing Plants

"Farmers' Cooperative Feed Mills--Plans and Operations" is the title of Miscellaneous Report 125 recently issued by the Farm Credit Administration. The author is W. M. Hurst of the Division of Mechanical Processing of Farm Products. The report is based on a survey made jointly by the Division and the FCA of 26 farmers' cooperative feed grinding and mixing plants in 11 states.

The report includes sketches of several types of mills and suggests changes in equipment and layout for improved performance. It considers labor requirements, warehouse handling, one-floor operations, simplified construction bins, and machinery.

Mycology Visitors Sign Chinese Guest Book

The ancient and beautiful Chinese guest book used by the Division of Mycology and Plant Disease Survey was presented to John A. Stevenson, head of the Division, by Dr. Lee Ling, formerly with the Agricultural Experiment Station of Formosa and now with the United Nations Food and Agricultural Organization. More than one hundred years old, it has padded covers of pale green silk brocade and heavy white paper, which opens in continuous accordion folds instead of the usual pages. These and the covers are edged with gold. The book is enclosed in a black folder fastened with loops and ivory pins.

During the past year 116 visitors from all over the world have signed the book. Some of them came to inspect the mycological collections maintained by the Division. Foreign visitors came to study the organization and operation of the Plant Disease Survey in order to get technical assistance in setting up similar surveys in their own countries.

Turnquist and Peterson To Conduct Potato Research

Orrin C. Turnquist, formerly of the University of Minnesota, and Dr. Clinton E. Peterson, formerly of Iowa State College, have been appointed full-time Federal agents in the Division of Fruit and Vegetable Crops and Diseases.

Mr. Turnquist is stationed at the University Farm, St. Paul, Minn., to coordinate potato-breeding activities in the North Central States and to carry on research fundamental to potato breeding. Minnesota, Iowa, North Dakota, Michigan, Wisconsin, and Nebraska are cooperating in the project. Dr. Peterson will conduct investigations in potato breeding and onion breeding at Ames.

World Soils Map Expanded

Work on the compilation of a world soils map, started by the Division of Soil Survey about 3 years ago, is being expanded. Dr. Joe Kubota, who recently received his Ph.D. at Wisconsin, and Clifford H. Simonson, who received training at Tennessee and Illinois, have joined the staff. Dr. A. J. Vessel has returned to the work after a 6 months tour of duty in the Palau Islands. Clinton A. Mogen has been transferred from an assignment in North Dakota to work on the map during the winter.

Schneider Appointed to Conduct Sugar Beet Research

Charles L. Schneider, assistant pathologist, was recently appointed by the Division of Sugar Plant Investigations to work on root rotting pathogenes of sugar beets and to assist with the development of resistant strains of sugar beets. He is stationed at University Farm, St. Paul, Minnesota.

Retirements

DR. DEAN H. ROSE, plant physiologist, Division of Fruit and Vegetable Crops and Diseases, December 31, with 30 years and 5 months of service.

Dr. Rose's research has been concerned with fundamental factors affecting the successful handling, storage, and transportation of fresh fruits and vegetables. He has written numerous Department circulars on his findings and is co-author with J. H. Beattie of the widely known Farmers' Bulletin 1939, "Home Storage of Fruits and Vegetables".

During the past few years, Dr. Rose has also been in charge of correspondence on technical questions with transportation agencies, storage warehousemen, and other commercial trade interests. Since 1918 he has served as advisor and consultant to the Farm Products Inspection Service of the Production and Marketing Administration.

Before coming to the Bureau in 1918, Dr. Rose taught botany at Kansas State College and served for four years as pathologist at the Missouri State Experiment Station. A native of Kansas, he is a graduate of the University of Kansas, holds a master's degree from Washington University, St. Louis, Mo., and a doctorate from the University of Chicago.

THOMAS J. HORRIGAN, painter, Plant Industry Station, December 17, after more than 23 years of service.

JOHN T. WILSON, carpenter's helper, Plant Industry Station, December 31, after more than 30 years of service.

Deaths

WILLIAM P. COX in Washington, D. C. Mr. Cox joined the Bureau in 1905 and was serving as senior administrative assistant in charge of accounts when he retired June 30, 1942.

* ADMINISTRATIVE NOTES *

Fast Written Communications

A recent memorandum from the Secretary's office urges wide use of Public Building Administration facilities for sending official telegrams. Charge for this service at 7 mills per word regardless of distance is much lower than through commercial channels. Since October 1947 when the FCC prohibited the differential rates formerly allowed the government, commercial lines have charged regular rates for all government telegrams.

Department policy now provides that all messages forwarded to the Department telegraph office for transmission be sent by the most economical means. In the field, officials are expected to follow this same practice when possible. More about PBA Fast Written Communications in Business Services Memorandum, No. 299, Supplements 1, 2, 3, and 4.

 * QUESTION AND ANSWER DEPARTMENT *

It has been suggested that a Department of this type will be helpful in presenting material of general interest. The questions are answered by Bureau officials concerned. Send your questions to BPISAE RESEARCH ACTIVITIES, Division of Information, Plant Industry Station, Beltsville, Md.

Clearance of Informal Talks and Press Releases

Q. Those of us in the field are often asked to make informal talks on our work at local meetings or on the radio or to give material to reporters on the local newspapers. What is the Bureau policy in clearing material of this type?

A. When the talk or press release is simply a report on research conducted under your general or immediate supervision or when it relates to phases of the Bureau work with which you are particularly familiar and on which reports have been published, you need no prior clearance.

Just for the record, however, you are expected to submit an original and a carbon copy of each talk or a brief outline or summary of it. Send this to the Office of the Chief of the Bureau through Division channels. Talks involving Department policies or the work of two or more Bureaus or agencies should be submitted through regular Division channels for clearance before presentation.

 * COMMENTS *

From Dr. P. V. Cardon, Administrator of ARA

I have examined with much interest and gratification the first issue of BPISAE RESEARCH ACTIVITIES. The form of this document as an administrative letter appeals to me as being very satisfactory and I shall be interested in learning from you at some later time the expressed reactions of employees.

Nothing in my experience with the Bureau Research Program Advisory Committee stands out so clearly as the apparent unanimity of feeling among members of the various working groups that some such publication would be advisable. Its success, however, will depend largely upon the response of employees and their willingness to make the best possible use of this medium. It is my fervent hope, therefore, that employees will take a keen interest in this commendable enterprise and that each individually will feel disposed to assume a degree of personal responsibility in making it thoroughly worthwhile.

From Dr. A. M. Schlehuber, Cereal Crops and Diseases

I notice in the opening statement of your letter that the idea is to keep us informed on Bureau research and related activities in fields other than our own. This it does. In addition, it also gives us some activities in our own field that we have very little opportunity of learning about because of our being located in the field.

 * PUBLICATIONS *

Departmental

Farmers Bulletin 2005 Using 2,4-D Safely

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